

# EasyOne Pro

Advanced lung function testing with DLCO in a portable solution



## Spirometry (FVC, FVL, SVC & MVV) Single Breath CO Diffusion (DLCO)

The proven ultrasound technology  
NDD TrueFlow™  
NDD TrueCheck™

no calibration, no warm-up  
time, no moving parts

Automated user guidance throughout maneuvers based on  
ATS/ERS standards 2019 and 2005

Z-score, LLN and %predicted for fast interpretation of results

Reproducible results ensure comparability in multicenter studies

Real-time curves and pediatric incentives

Immediate test quality feedback in accordance with  
ATS/ERS criteria

Export of pdf files and raw data

Flexible HL7 and XML interface for easy EMR integration

Only 1 gas for DLCO, no calibration gas required

Absolute hygienic solution with Spirette and Barriette  
consumables eliminates the risk of cross-contamination

Compact device with smooth surfaces for easy and thorough  
cleaning

**TrueFlow**  
makes the difference

The original ultrasonic flow measurement is highly accurate in all flow ranges, independent of gas composition, pressure, temperature and humidity and does not require calibration during its life-time. The sensor is never in direct contact of the patient's flow. NDD TrueFlow™ is a hygienic and resistance-free solution.

**TrueCheck**  
automated precision

**TrueCheck™ – Always Safe & Ready to Test**

TrueCheck™ takes care of the essential quality control for gas analysis testing. EasyOne Pro® is the only device proven to be accurate for a lifetime for DLCO measurements.

### Standards & Recommendations

<b>Quality, Medical Devices &amp; Electrical</b>	ISO 13485, ISO 14971, IEC 62366, IEC 62304, ISO 26782, ISO 23747, IEC 60601-1, IEC 60601-2, ISO 10993-1
<b>FDA</b>	510(k) market clearance
<b>MDD 93/42/EEC</b>	CE marked
<b>Associations &amp; Institutes</b>	ATS/ERS 2019 and 2005, NIOSH/OSHA, SSA Disability

### Languages

Brazilian Portuguese, Chinese, Croatian, Danish, Dutch, English, Finnish, French, German, Italian, Japanese, Norwegian, Portuguese, Russian, Spanish, Swedish, Turkish, Vietnamese

### Gas specification

<b>DLCO</b>	<ul style="list-style-type: none"><li>9% to 11% medical grade helium</li><li>0.27% to 0.33% medical grade carbon monoxide</li><li>18% to 25% medical grade oxygen balance nitrogen</li><li>The DLCO test requires a gas mixture within an accuracy range of &lt;2%</li></ul>
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### Technical

<b>Printing options</b>	PCL standard, direct to printer or over network
<b>Data management</b>	EasyOne Connect (SQLite, MS SQL Server)
<b>Export</b>	HL7, XML, GDT, via USB, LAN Network
<b>Data links</b>	Ethernet port, USB, possibility to upgrade to WLAN
<b>No. of tests</b>	> 10'000 tests
<b>Age range</b>	Spirometry > 4 years, DLCO > 6 years
<b>Dimensions</b>	27 x 33.5 x 27 cm <sup>3</sup> (H x W x D), 8 kg
<b>Device classification</b>	Protection class I Type BF applied part
<b>Operating conditions</b>	Temp 5 - 40 °C/41 - 104 °F Rel. Humidity 15 - 95 %, no condensation Atmosph. Pressure 700 - 1060 hPa
<b>Power Consumption</b>	Up to 80 VA

## Parameters

<b>FVC</b>	ATI, BEV, EOTV, FEF10, FEF25, FEF 2575, FEF2575_6, FEF40, FEF50, FEF50/FVC, FEF50/VCmax, FEF60, FEF75, FEF75-85, FEF80, FET, FET25-75, FEV.25, FEV.5, FEV.5/FVC, FEV.75, FEV.75/FEV6, FEV.75/FVC, FEV.75/VCmax, FEV1, FEV1/FEV6, FEV1/FVC, FEV1/FVC6, FEV1/VC, FEV1/VCmax, FEV3/FVC, FEV3/VCmax, FEV3, FEV6, FVC, MEF20, MEF25, MEF40, MEF50, MEF60, MEF75, MEF90, MMEF, MTC1, MTC2, MTC3, MTCR, PEF, PEFT, t0, VCmax
<b>FVL</b>	ATI, BEV, CVI, E50/150, EOTV, FEF10, FEF25, FEF2575, FEF2575_6, FEF40, FEF50, FEF50/FVC, FEF50/VCmax, FEF60, FEF75, FEF75-85, FEF80, FET, FET25-75, FEV.25, FEV.5, FEV.5/FVC, FEV.75, FEV.75/FEV6, FEV.75/FVC, FEV.75/VCmax, FEV1, FEV1/FEV6, FEV1/FVC, FEV1/FIV1, FEV1/FIVC, FEV1/FVC, FEV1/VC, FEV1/VCmax, FEV3/FVC, FEV3/VCmax, FEV3, FEV6, FIF25, FIF2575, FIF50, FIF50/FEV50, FIF75, FIV.25, FIV.5, FIV1, FIVC, FVC, MEF20, MEF25, MEF40, MEF50, MEF60, MEF75, MEF90, MIF25, MIF50, MIF75, MMEF, MMIF, MTC1, MTC2, MTC3, MTCR, PEF, PEFT, PIF, t0, VCmax
<b>SVC</b>	ERV, IC, IRV, Rf, VC, VCex, VCin, VCmax, VT
<b>MVV</b>	MVV, MVV6, MVVtime, Rf, VCext, VT
<b>DLCO</b>	BHT, COHb, ColBarVol, CO Conc, HE Conc, O2 Conc, Anatomic Dead Space, System Dead Space, Discard Volume, DLadj, DLadj/VA, DLCO, DLCO/VA (KCO), ERV, FA CO, FA HE, FE CO, FEV1/FVC, FI CO, FI HE, FRC sb, FRC Cor, Hb, tl, Kroghs K, PaO2, RV sb, RV Cor, RV/TLC sb, RV/TLC Cor, TLC sb, TLC Cor, TLCO, VA sb, VA Cor, VCext, VCmax, Vd, VI, VT

## Predicted normal values Spirometry

<b>GLI</b>	Quanjer 2012, Stanojevic 2009
<b>North America</b>	Crapo 1981, Dockery (Harvard) 1993, Eigen 2001, Gutierrez (Canada) 2004, Hsu 1979, Knudson 1983, Knudson 1976, Morris 1971 & 1976, NHANES III (Hankinson) 1999, Polgar 1971
<b>Latin America</b>	Chile 2010, Chile (Pediatrics) 1997, Pereira 1992, Pereira 2006/2008, Pérez-Padilla (PLATINO) 2006, Pérez-Padilla (Mexico) 2001, Pérez-Padilla (Mexico, Pediatrics) 2003
<b>Europe</b>	ERS (ECCS, EGKS, Quanjer) 1993, Garcia-Rio (SEPAR) 2013, Falaschetti 2004, Forche (Austria) 1988 & 1994, Klement (Russia) 1986, Roca (Spain, SEPAR) 1982, Rosenthal 1993, Sapaldia (Switzerland) 1996, Vilozni 2005, Zapletal 1977, Zapletal 2003
<b>Europe Scandinavia</b>	Berglund Birath (Sweden) 1963, Finnish 1982 (1998), Gulsvik (Norway) 1985, Hedenström 1985 & 1986, Langhammer (Norway) 2001, Kainu (Finland), 2016, Nystad 2002
<b>Australia</b>	Gore Crockett 1995, Hibbert 1989
<b>Asia</b>	Chhabra (India) 2014, Dejsomritrutai (Thailand) 2000, Indonesia 1992, IP (China, HongKong) 2000 & 2006, JRS 2001 & 2014
<b>Africa</b>	Mengesha (Ethiopia), 1985

## Predicted normal values DLCO

<b>North America</b>	Ayers 1975, Burrows 1961, Crapo 1981 & 1982, Knudson 1987, McGrath & Thompson 1959, Miller 1980, Gutierrez (Canada) 2004, NHANES (Neas) 1996, Polgar 1971
<b>Latin America</b>	Vazquez Garcia (ALAT) 2016, Gochicoa 2019
<b>Europe</b>	Stanojevic (GLI) 2017, ERS ECCS/EGKS 1993, Zapletal 1977, Roca 1990 & 1998, Hedenström 1985 & 1986, Gulsvik 1992, Klement (Russia) 1986
<b>Other</b>	Pereira 2008, Thompson 2008, Kim 2012, Chhabra (India) 2015), Ip (China, HongKong) 2007, JRS (Japan) 2001

Flow/Volume Sensor		Gas Sensor	CO
<b>Type</b>	Ultrasonic transit time	<b>Type</b>	Non-dispersive infrared
<b>Flow Range</b>	± 16 l/s	<b>Range</b>	0 to 0.35%
<b>Flow Resolution</b>	4 ml/s	<b>Resolution</b>	0.0001% (1 ppm)
<b>Flow Accuracy (except PEF)</b>	± 2% or 0.02 l/s	<b>Accuracy</b>	± 0.0015% (15 ppm)
<b>Volume Resolution</b>	1 ml	<b>Tracer Gas Sensor Helium</b>	
<b>Volume Accuracy</b>	± 2% or 0.050 l	<b>Type</b>	Ultrasonic transit time
<b>PEF Accuracy</b>	± 5% or 0.200 l/s	<b>Range</b>	0 to 50%
<b>MVV Accuracy</b>	± 5% or 5 l/min	<b>Resolution</b>	0.02%
<b>Resistance</b>	~ 0.3 cm H <sub>2</sub> O/l/s at 16 l/s	<b>Accuracy</b>	0.05%
<b>Sample Rate</b>	400 Hz (converted and stored with 200 Hz)		

## Accessories and order numbers

<b>Spirette</b>	Box 50 pcs 2050-1	<b>DLCO Bariette</b>	Box of 50 pcs 3050-1	<b>Annual replacement kit</b>	3000-50.50SP
	Box 200 pcs 2050-5		Box of 100 pcs 3050-2	(filter pack, patient tube, one-way valve and overpressure valve)	
	Box 500 pcs 2050-10	<b>Stand for Sensor</b>	3000-07.00		